

OWNERS MANUAL



MARK IV™ MIXER



WARNING: TO PREVENT ELECTRICAL SHOCK OR FIRE HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. BEFORE USING THIS APPLIANCE, READ THE OPERATING GUIDE FOR FURTHER WARNINGS.

①

+10 dBV

●

CHANNEL

16

STATUS INDICATOR

●

-10 dBV

+10 dBV

●

SUB

⑥8 1

STATUS INDICATOR

●

-10 dBV

+10 dBV

●

SUB

2

STATUS INDICATOR

●

-10 dBV

+10 dBV

●

SUB

3

STATUS INDICATOR

●

-10 dBV

+10 dBV

●

SUB

4

STATUS INDICATOR

●

-10 dBV

PEAVEY

A PRODUCT OF PEAVEY ELECTRONICS CORP.

⑥9

LAMP DIM

POWER

●

OFF

⑦0

②

10+ -20+ -20- 30+

GAIN

③

4 5 6 7 8 9 10

MON. A

④

3 0 3 6 9 12 15 16+

MON. B

⑤

3 0 3 6 9 12 15 16+

HIGH

⑥

3 0 3 6 9 12 15 16+

LO MID

⑦

3 0 3 6 9 12 15 16+

LOW

⑧

4 5 6 7 8 9 10

EFF.

⑨

1, 3 PAN 2, 4

⑩

1, 2

⑪

3, 4

⑫

SUM

⑬

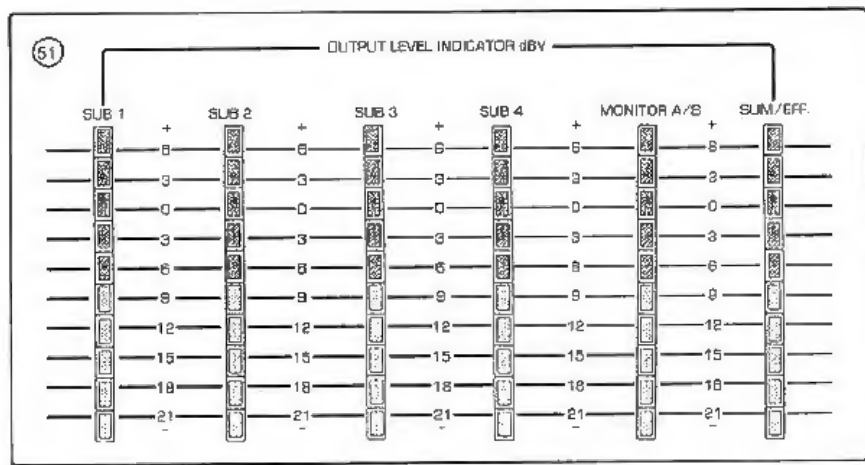
PFL

⑭

+14 +10 +6 +3 0 -3 -6 -10 -20 -∞

16

LEVEL



MK-IV™ COMMERCIAL

16 ch. MIXING CONSOLE

⑮

4 5 6 7 8 9 10

REV. RET.

⑯

1, 3 PAN 2, 4

⑰

1, 2

⑱

3, 4

⑲

SUM

⑳

PFL

㉑

100 20 500

LOWCUT

㉒

PFL

㉓

100 20 500

LOWCUT

㉔

PFL

㉕

4 5 6 7 8 9 10

REV. MON. A

㉖

1, 2

㉗

3, 4

㉘

SUM

㉙

PFL

㉚

100 20 500

LOWCUT

㉛

PFL

㉜

4 5 6 7 8 9 10

REV. MON. B

㉝

1, 2

㉞

3, 4

㉟

SUM

㊱

PFL

㊲

100 20 500

LOWCUT

㊳

PFL

㊴

4 5 6 7 8 9 10

EFF. RET.

㊵

1, 3 PAN 2, 4

㊶

1, 2

㊷

3, 4

㊸

SUM

㊹

PFL

㊺

100 20 500

LOWCUT

㊻

PFL

㊼

4 5 6 7 8 9 10

EFF. MON. A

㊽

1, 2

㊾

3, 4

㊿

SUM

④0

4 5 6 7 8 9 10

EFF. MON. B

④1

3 0 3 6 9 12 15 16+

EFF. MAS.

④2

4 5 6 7 8 9 10

PFL LEVEL

④3

3 0 3 6 9 12 15 16+

H.P. LEVEL

④4

ON

④5

+14 +10 +6 +3 0 -3 -6 -10 -20 -∞

SUB 1

SUB 2

SUB 3

SUB 4

SUM

④6

LOW Z TALKBACK MIC

④7

4 5 6 7 8 9 10

MICROPHONE LEVEL

SET ● CALL

● ACTIVE

④8

OFF ON

INTERCOM

④9

4 5 6 7 8 9 10

INTERCOM LEVEL

HEADPHONE

MON. A

MON. B

SUM

TALKBACK ASSIGN

TALKBACK

OFF ON

ACTIVATE

⑤0

4 5 6 7 8 9 10

TALKBACK LEVEL

LED STATUS DISPLAY (1)

The LED Status Display instantaneously displays the operational state of the respective channels. The -10 dBV or normal indicator is green and when illuminated indicates that the channel is active and that a signal level of at least .3 volts RMS is being fed to the channel fader. The sampling of this status indication takes place immediately after the input gain control and also immediately after the equalization so that any boost or cut with the channel EQ will be exhibited by the LED indication. The +10 dBV (red) LED serves as a warning system and indicates that overload could occur. The channel is capable of +18 dBV and just because the +10 LED flashes doesn't mean that the channel has gone into severe overload, but simply that +10 has been reached (3 volts). Absence of input signal for any reason will result in no illumination of the -10 dBV LED. Proper adjustment of input gain should allow the +10 dBV LED indicator to only flash on extreme peaks of program material.

INPUT GAIN CONTROL (2)

The Input Gain Control of the Mark IV™ Mixer utilizes a dual control element configuration so that input **attenuation** and **gain adjustment** occurs simultaneously. This arrangement allows the vital input circuitry to handle almost any input voltage from low level mics to speaker levels. The status of this input preamp is monitored by the normal -10 dBV/+10 dBV (LED) indicators located above. The function and operational requirements of this input gain stage are conventional and should present no operational difficulty.

MONITOR SEND CONTROLS (A AND B) (3)

The Mark IV™ is equipped with two separate monitor send controls which allow two completely separate monitor mixes to be achieved. The signals for both monitor sends are obtained immediately after the input preamp and before the equalization circuitry. This configuration for monitor mix adjustment is called **Pre** (which means that the signal is taken before equalization and the channel slide level control). In fact the only other control on the entire array of channel controls that effects the monitor sends is the input gain control. Once the input gain control has been properly set and the gain has been established the monitor sends are totally independent of any other functions on the channel. This **Pre** (arrangement) is necessary for sound reinforcement so that adjustments may be made in equalization and level for the out front mix without affecting either of the monitor mixes. Both monitor sends are very conventional in nature and should present no operational difficulties.

HIGH FREQUENCY EQ (4)

This control determines the relative boost or cut of the highest frequency adjustment on this console and features a 15 dB boost or cut at 15 kHz. This control operates in a shelving configuration which prevents any additional gain above the usable audio spectrum from causing undesirable hiss and instability. The zero setting indicates a flat frequency response with no alteration of the extreme highs and clockwise indicates a boost while counterclockwise indicates a cut or a dip in the high frequencies. Usually feedback is not much of a problem at very high frequencies but the control is very important for giving that sibilant sound on the extreme highs and on the s's and t's of vocals.

HIGH MID FREQUENCY EQ (5)

This control determines the relative boost or cut of the upper mid or lower treble frequencies and is capable of +15 dB at 3 kHz. A balance of mid range frequencies should begin with a flat setting of zero so that adjustments may be made with a cut or a boost of this control. The action of this control is peak/notch type which interfaces with the adjacent equalizers in a smoother manner to yield optimum summing capability of the channel equalization. Usually a minus setting of this control is desirable to eliminate harshness with most systems and control feedback.

LOW MID FREQUENCY EQ (6)

This control is operational in the lower mid range or upper bass region and is capable of 15 dB boost or cut at 400 Hz. This EQ control exhibits a peak/notch characteristic which operates smoothly with the adjacent equalizer controls and allows proper balancing of the lower mid range and upper bass frequencies. This control is very vital for controlling the mid range frequencies of the human voice when vocals are being amplified.

LOW FREQUENCY EQ (7)

This control is capable of 15 dB boost or cut at 60 Hz and demonstrates a shelving characteristic so that excessive lows are not boosted below the usable range of typical sound reinforcement. The shelving action of this circuit has proven to yield much more satisfying and effective equalization characteristics than some of the wide open EQ circuits claiming 20 to 25 dB boost and cut. Care should be taken with the low frequency control not to over-boost lows on any particular instrument or vocal due to the fact that tremendous amounts of headroom will be used up and a general muddiness will be apparent in the sound system reproduction. Woofers may also be blown much more easily with extreme low frequency boost.

EFFECTS SEND CONTROL (8)

This effects control is **post** and is effected by the equalization of each channel and its level is also effected by the channel slide level control. NOTE: This action is totally opposite from the monitor send controls on each channel which are **pre** and unaffected by other features on the channel. When the effects send control is activated on any particular channel a signal is sent through the master effects level control and appears at the effects output on the rear panel. This output may be patched into many various effects devices. (See effects patch diagrams) NOTE: The internal reverb drive receives its signal from the effects send control also and a signal is then sent to the master reverb control in the master section in order for the internal reverberation system to function. When operating an out board effects device and the internal reverb system simultaneously the channel send control on the effects mix must be optimized for the amount of both effects on a particular channel.

PAN CONTROL (9)

The pan control is to assign a balance of the channel output to any one of four sub-masters or all the sub-masters. The action of the pan control is conventional and when rotated counterclockwise the assignment is accomplished to sub-masters one or three or both depending upon which assignment button is depressed. When this control is rotated clockwise the assignment is accomplished to sub-masters two or four or both depending upon which assignment button is depressed. A setting of straight up 12 o'clock will allow the channel to send its output signal to all four sub-masters equally provided both channel assignment buttons are depressed.

ASSIGNMENT SWITCH (1, 2) (10)

This function when depressed allows the channel to send its output through the pan control to sub-masters **one** and **two**. However, the setting of the pan control decides if both sub-masters are to receive this signal or if only one is to be utilized. With this function activated and the pan control rotated fully counterclockwise the assignment is to sub-master number **one**. With the pan control rotated fully clockwise the assignment would obviously be to sub-master **two**. A setting in the center of the pan control rotation would assign this channel to sub-masters **one** and **two** equally.

ASSIGNMENT SWITCH (3, 4) (11)

The operation of this function is identical to the one above and should present no operational difficulties. NOTE: The assignment through the pan control with this function is to sub-masters **three** and **four**.

ASSIGNMENT SWITCH SUM (12)

The sum function when depressed will send a signal directly from the channel output to the sum master slider level control and will bypass all sub-masters. This control is very useful when the output of a channel is not needed in one of the sub-masters but is needed for the overall performance. Many times the lead vocalist of a group or the main artist may be assigned directly to the sum so that adjustment of the sub-masters will not affect this particular performer.

CHANNEL PFL CONTROL (13)

The PFL function allows the operator to instantly derive a "Q" or **pre fade listen** signal through the headphones for any of the channels individually. Changes of equalization, input gain setting, and any other channel functions may be monitored from the PFL system because the signal is derived after the equalization but before the channel slide level control. This function is also effected by the input gain setting. In order to monitor an individual channel through this function on the PFL master level control in the master section must be turned up to the desired listening level, and PFL button must be depressed on the channel.

CHANNEL LEVEL SLIDER (14)

The channel level slider is the output control that determines the mix of the various channels into the master mix. Due to the unique action of channel assignment this control may send a signal to any of the sub-masters or directly to the sum main level slider. This control should be operated near the zero indication of unity gain whenever possible and the input gain control should be adjusted accordingly for each instrument or vocal etc. NOTE: Above the zero point on the channel level slider there is 14 dB of gain as you increase to the upper limit of the slide level control. It is virtually impossible to have too much gain during typical sound reinforcement situations and when a low gain situation presents itself it is nice to be able to increase the channel gain by 14 dB with the slide level control and possibly avoid having to readjust input gain sensitivity. NOTE: Operation above "0" increases system noise. Operation below "0" decreases system noise but at the sacrifice of system headroom.

MASTER SECTION

REVERB RETURN CONTROL (15)

This controls the amount of delayed signal from the internal reverb unit to be mixed back into the main mix. This control should be adjusted to approximately between 2 and 3 of its rotation. NOTE: Channel effects send control must be adjusted for desired amount of reverb on a particular channel.

REVERB PAN CONTROL (16)

The reverb pan control allows the signal from the reverb return control to be routed to only one submaster of all submasters, provided the assignment switches are depressed for the desired mix. Counterclockwise assigns to subs (1) and (3) while clockwise rotation assigns to subs (2) and (4).

REVERB ASSIGNMENT SWITCH (1, 2) (17)

With this switch depressed, the pan control (above) will assign the delayed (reverb) signal to submasters (1) or (2) or both. Note: A setting of (12:00) on the pan control will assign equally to subs (1) and (2).

REVERB ASSIGNMENT SWITCH (3, 4) (18)

The action of this switch is identical to the (1, 2) control except the routing of delayed signal is accomplished to submasters (3) and (4). Once again, please note that a setting of (12:00) on the pan control will assign to subs (3) and (4) equally with this control.

SUM ASSIGNMENT SWITCH (19)

The internal reverb capabilities may be assigned directly to the sum output by simply depressing the sum (direct) assignment switch. Note: The action of this control by-passes all four submasters and the reverb pan control does not function when the sum assign control is activated.

PFL (20)

This switch functions similar to the other "pre fade listen" features except through the headphones the reverb signal is monitored before the reverb return control (once again "pre" meaning before the level control). NOTE: PFL master control must be adjusted for desired listening level.

LOW CUT CONTROL (SUB 1) (21)

The low cut control tailors the low frequency response of all instruments or vocals assigned to submaster no. 1. The response of this control is a roll-off function of 12 dB per octave beginning at the frequency which is selected by rotation of the control knob. The range of frequency selection is 20 Hz to 500 Hz. The low cut feature is a very useful device for matching the main output (sum) signal with the capabilities of the power amp/speaker system. Low frequencies which the speaker system will not reproduce efficiently may be cut by 12 dB per octave thus eliminating the "muddiness" often encountered with large sound systems. Also durability of the woofers (bass speaker system) is usually much better when those devices are not reproducing frequencies below their recommended cut-off.

PFL CONTROL (SUB 1) (22)

This PFL function allows the operator to instantly monitor the mix which has been assigned to submaster no. 1. The action of all PFL features are "pre" the fader so in this case the slide level control may be off and the PFL will still allow sampling of this mix through the headphones. Note: For any PFL functions to be monitored the PFL master must be

adjusted for audible gain. Also all master PFL functions are defeated if a channel PFL button is depressed. In other words channel PFL's have "priority" over master PFL's. This feature allows the operator to select a channel PFL without de-assigning a master PFL selected previously. (See Master PFL description)

SUBMASTER LEVEL SLIDER (SUB 1) (23)

The submaster level slider is the output level device for the entire "sub 1" mix. This control feeds the main output summing system which eventually is controlled by the "sum" output level slider. The "sub 1" level slider also sends a signal for the entire "sub 1" mix to the "submaster 1" output jacks on the rear panel. (See description of switched and un-switched jacks). This control should be regulated near the mid-point of its travel for optimum signal-to-noise performance. Note: A setting above "0" dB will increase output signal but also increases system noise and a setting below "0" dB will result in improved noise performance at the cost of less headroom.

EFFECTS RETURN CONTROL (24)

This control is the final element for blending the signal from an effects device back into the main mix. Output signals from effects devices are normally attached into the effects return jack on the rear panel. The signal then proceeds directly to the effects return control to set the final mix level. This control will be operated near the mid point of rotation with most effects devices. NOTE: Channel effects send control must be adjusted for desired amount of effects on a particular channel.

EFFECTS PAN CONTROL (25)

The Effects Pan Control allows the signal from the effects return control to be routed to only one submaster or all submasters provided the assignment switches are depressed for the desired mix. Counterclockwise assigns to subs (1) and (3) while clockwise rotation assigns to subs (2) and (4).

EFFECTS ASSIGNMENT SWITCH (1, 2) (26)

With this switch depressed the pan control (above) will assign the effects signal which appears at the effects return jack to submasters (1) and (2) or both. NOTE: A setting of 12:00 on the pan control will assign equally to subs (1) and (2) when this switch is depressed.

EFFECTS ASSIGNMENT SWITCH (3, 4) (27)

The action of this switch is identical to the (1,2) control except the routing of the effects return is accomplished to submasters (3) and (4). Once again please note that a setting of 12:00 on the pan control will assign to subs (3) and (4) equally with this control.

SUM ASSIGNMENT SWITCH (28)

The effects return signal may be assigned directly to the sum output by simply depressing the sum (direct) assignment switch. NOTE: The action of this control bypasses all four submasters and the effects pan control does not function when the sum assignment control is activated.

PFL (29)

This switch functions similar to the other "pre fade listen" features except through the headphones the effects signal is monitored before the effects return control (once again "pre" meaning before the level control). NOTE: PFL master control must be adjusted for desired listening level.

LOW CUT CONTROL (SUB 2) (30)

The action of this control is identical to the action of the low cut control for submaster (1) and offers a 12 dB per octave roll off beginning at the frequency which is selected by rotation of the control knob. The range of frequency selection is 20 Hz to 500 Hz. (See Low Cut Control Sub 1).

PFL CONTROL (SUB 2) (31)

This PFL function is identical in operation to the PFL Control for sub (1). The action of this control is "pre" and in this case the signal is derived before the sub (2) level slider. (See PFL Control Sub 1)

SUBMASTER LEVEL SLIDER (SUB 2) (32)

The Submaster Level Slider for submaster (2) is identical in operation to that of submaster (1). This control should be regulated near the mid point of its travel for optimum system performance. (See Submaster Level Slider Sub 1).

REVERB MONITOR A AND B CONTROLS (33)

These controls are designed to blend the delayed reverb signal into both monitor mixes (A and B). NOTE: Effects sends on channels, effects master, and reverb return to mains should be adjusted first before attempting to blend reverb into the monitors. The reverb to monitor control should be adjusted to personal taste.

MASTER MONITOR CONTROLS (A AND B) (34)

The master monitor controls are the final gain elements which determine the output level of each separate monitor mix. The monitor output signals appear at the A and B monitor jacks on the rear panel. These controls should be adjusted near the mid point of their rotation for optimum headroom/signal to noise performance.

LOW CUT CONTROLS (MONITOR A & B) (35)

The low cut controls function identical to those already described for subs (1) and (2). (See Low Cut Control Sub 1).

PFL (MONITOR A & B) (36)

The monitor A & B PFL controls are push/push switches which enable the operator to listen (pre) before the master controls. The PFL master should be adjusted for the desired headphone listening level.

LOW CUT CONTROLS (SUBS 3 AND 4) (37)

The low cut controls function identical to those already described for subs (1) and (2). (See Low Cut Control Sub 1)

PFL CONTROLS (SUBS 3 AND 4) (38)

The PFL functions for submasters (3) and (4) are identical in operation to the PFL controls for subs (1) and (2). (See PFL control Sub 1)

SUBMASTER LEVEL SLIDERS (SUBS 3 AND 4) (39)

The action of the level slider for subs (3) and (4) are identical to the level controls for subs (1) and (2). (See Sub (1) Slide Level Control)

EFFECTS TO MONITOR A AND EFFECTS TO MONITOR B CONTROLS (40)

The action of these controls are very similar to the reverb blend controls for monitors A and B except they are normally used for an external (outboard) effects device that has been patched into the system. When either monitor mix A or B desires some of a special effect, such as a delay unit, chorus effect, etc., the effects to monitor A and to monitor B controls

may be used to blend some of that effect back onto either one or both of those monitor mixes. The operation of this control is conventional and the final setting is entirely regulated by personal taste.

EFFECTS MASTER (41)

The effects master control is the final gain determining element over all the effects send controls on each channel. The output signal from this control proceeds to the input of the internal reverb system and at the same time it appears on the back panel at the effects output jack. NOTE: When using effects and the internal reverb system, this control must be optimized as a master output control for the internal reverb system and the effects device which may be patched in outboard. To closely optimize this control for most effects devices, it should be adjusted to near the "0" dB or mid-point of its travel.

PFL LEVEL CONTROL (42)

The PFL level control is a master function which sets the pre fade listen level for any function that should be monitored individually through the headphones. This control should be adjusted for the desired listening level and the PFL push switch must be activated on any channel, submaster, or effects when pre fade listen is desired. The PFL level control overrides the headphone level and any time a PFL push switch is activated, this function is monitored in both sides of a typical stereo headphone situation. Once the PFL push switch is deactivated, the listening then reverts back to normal headphone operation.

HEADPHONE LEVEL (43)

The headphone level is a master function which sets the listening level for normal headphone situations. When this control is adjusted for a normal listening level and no PFL switches are activated the output for the sum may be monitored in both sides of the headphones equally. NOTE: When PFL functions are activated, the overall level for the headphones reverts back to the PFL level master control and the headphone level control has no affect during PFL action.

PFL ON LED INDICATOR (44)

The PFL activated indicator will allow the operator to see when a PFL function has been activated anywhere on the board. This feature is very necessary when individual monitoring of a particular channel is desired and there happens to be another PFL switch activated at the same time.

SUM LEVEL SLIDER (45)

The sum level slider is the final gain determining element of the overall mix and the output from this control appears at the sum output jacks on the rear panel. The overall mix has usually been assigned by the submasters before the signal reaches the sum output level slider. This control is conventional in nature of operation and should present no problem to the sound engineer. It should be operated near the "0" dB indication of unity gain whenever possible for best signal to noise/headroom performance. NOTE: There is 14 dB of gain built into the sum slider so that low gain situations may be compensated for at the final output level device.

LOW Z TALKBACK MIC INPUT (46)

This input is used for talkback and intercom. It should be a typical low impedance microphone of the operator's choice. This input is unbalanced and incorporates a +15 volt phantom power supply for use with standard phantom powered mics if desired.

MICROPHONE LEVEL (47)

The microphone level is the gain regulating device for the mic system. After plugging in the microphone which is to be used for intercom and talkback, the operator should then adjust the level of the microphone until the green, active indicator is lit and under extreme levels the set call red indicator should light. This is the normal gain adjustment for the microphone. This system is designed to indicate use of the microphone for intercom with the green active LED and tapping on the microphone will usually result in lighting the red LED, which is used as a call function. This is to notify another person at the other end of the intercom system that someone is trying to contact them from the console.

INTERCOM ON/OFF FUNCTION (48)

The push switch for intercom activation is a push/push control such as the PFL and assign switches that assigns the mixer to intercom system or removes the unit from intercom functions. This function allows the talkback features of the board to be separate from intercom. Intercom would normally be the communications between two mixing consoles, such as stage monitors and the out front board or to the lighting personnel or to the show producer, etc., while talkback is usually to stage from the out front (main) console.

INTERCOM LEVEL (49)

The intercom level is the gain regulating device which determines the listening level in the headphones for the intercom system and the related jack for the headphones is right below this function.

TALKBACK SECTION (50)

The push switches for monitor A, monitor B, and sum are conventional in nature and should present no problem for the operator. Simply press the switches to the desired output that you would like to talkback to. For instance, monitor A and monitor B would normally be to communicate back to the stage, while the sum switch would allow a person at the out front (main) console to speak over the house system with the talkback mic. The talkback activate switch is simply a momentary push switch which must be held in the downward position to talk to the different output busses. This momentary on design prevents a person at the out front console from accidentally leaving this switch on, in which case any talking at the out front console would be heard through one of the monitor mixes on stage, or out front. The talkback level control determines the amount of gain necessary for the talkback function. NOTE: The microphone level above must be set properly first.

OUTPUT LEVEL INDICATION (51)

Ten segment LED arrays have been provided to visually indicate the output level of each of the Mark IV's separate outputs. Submasters one through four have their own individual LED ladders and the sum, monitors and effects outputs are switchable to the other two arrays.

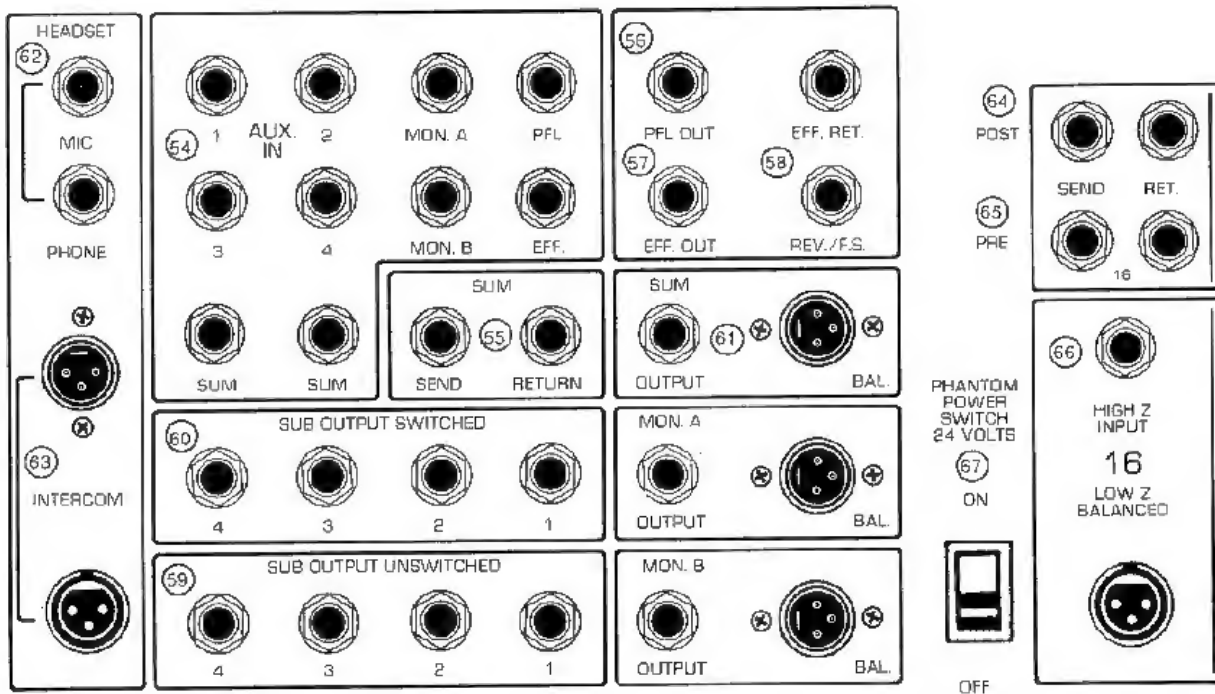
MONITOR A/MONITOR B INDICATOR SELECT (52)

The monitor A/monitor B indicator select switch will allow the operator to switch the LED array from monitor A to monitor B simply by pushing the indicator select switch.

SUM/EFFECTS INDICATOR SELECT (53)

The sum/effects indicator select switch will allow the operator to switch this ten segment LED array to either the sum or the effects output.

REAR PANEL FEATURES



AUXILIARY INPUTS (54)

The auxiliary patch panel at the rear of the MARK IV™ Mixer provides inputs for all nine separate mix busses. They are as follows: Submasters 1, 2, 3, and 4, Monitor A, Monitor B, Effects, Sum and PFL. Any one of these inputs may be used for patching an external signal into any one of the above mix busses. The PFL auxiliary input has been included so that two mixers may be patched together and the PFL function may also be interconnected to facilitate pre fade listen to the add on mixer. See patch diagram for patching auxiliary submixer to Mark IV™. The sum auxiliary inputs may be used for patching separately equalized subs back into the sum for a mono feed to the power amplifiers. (See patch diagram for separately equalized subs.)

SUM SEND AND RETURN (55)

The sum (main) output bus has a separate send and return on the rear panel which allows in-line patching of an equalizer, compressor, or almost any other line level device to be interconnected before the sum balanced output. There is a switching jack on the return which breaks the circuit and allows this loop to be completed with an external device patched in. NOTE: There is no switching jack on the send and a signal may be taken from this jack at any time without disturbing the main mix or without breaking the audio chain.

PFL OUT (56)

The PFL output is normally used to feed the auxiliary PFL of another board such as the Mark IV™ mixer in order to keep the PFL function operating normally for both mixers. This jack is a stereo type with signal on the "tip" and logic function on the "sleeve." NOTE: All PFL patching must be accomplished using a two conductor shielded cable with stereo plugs.

EFFECTS OUTPUT (57)

The effects output is the signal directly from the effects master and is normally used to drive an external effects device. Effects devices used with this effects output system should be line level devices and not the typical units that are designed to interface between a guitar and a guitar amplifier. However, the effects out does include two levels (Hi and Lo) for units with varying input sensitivities. The output jack is stereo with the first position being low and the second position being high.

REVERB/FOOTSWITCH JACK (58)

The reverb footswitch jack has been provided so that the internal reverb system may be remotely operated for those engineers who would like to only use reverb at certain times during their concert or completely delete the reverb system when performers are speaking on stage. Most any single function on/off switch that is equipped with a ¼" phone plug will work in this jack. The footswitch jack is also of the stereo type and the footswitch plug should only be inserted to the first position. The second position defeats the internal reverb and may be used for a second effects return when needed.

SUB OUTPUT UNSWITCHED (59)

Individual outputs for submasters 1 through 4 have been provided on the rear panel and maybe used without disturbing the program to patch into a tape deck or any type additional power amp/speaker system etc. There are no switching functions that take place when these jacks are employed and a signal is merely derived from each submaster individually. (See patch for recording four separate tracks from these outputs.)

SUB OUTPUT SWITCHED (60)

Individual outputs for submasters 1 through 4 have been provided on the rear panel and they are switching type jacks. Once a 1/4" phone plug is employed with any one of these switched outputs the circuit is broken and must be patched back into the sum. If the submaster outputs are intended to be part of the main output. These are switching functions to allow the in line patching of separate EQ, limiters, or special effects for any submaster during sound reinforcement situations. NOTE: There are only two sum auxiliary inputs that may be patched direct and if all four submasters must be patched back into the sum then a "Y" connector is necessary. (See the patch diagram for equalized submasters.)

OUTPUTS FOR SUM, MONITOR A AND MONITOR B (61)

Balanced and unbalanced outputs have been provided for these three functions to allow the use of the Mark IV™ mixer on long snake cables with the 600 ohm transformer balanced output. There is also an unbalanced high impedance output that may be used for close patchwork when interference is not a problem and long snake cables are not employed. NOTE: Two separate monitor mixes may be achieved from the Mark IV™ and transmitted through long snake cables without the danger of outside interference when using the 600 ohm balanced output for monitor A and monitor B.

HEADSET (MIC/PHONE) JACKS (62)

These jacks are 1/4" phone and are designed to accept typical communications headsets that are equipped with mic and headphones. The com-system is monaural, and should accept most commercially available intercom mics and headphones. (These units may be used in place of talk-back mic.)

INTERCOM PATCH JACKS (63)

Two 3-pin XLR type jacks have been provided for connecting intercom system between mixers or "talkcom" units. Master/Com™ and Talk/Com™ units are soon to be available from Peavey Electronics.

POST SEND AND RETURN JACKS (64)

The post send and return jacks function exactly the same as the pre send and return jacks with one exception. The post signals occur in the audio chain after the channel slide level control which is also after EQ and all other functions. These patch functions are capable of allowing the individual channel signal after the slider to be patched where ever necessary and the return jack allows a signal to be brought back into each channel after the channel level control. For recording situations many times an individual output is needed from a particular channel after the EQ and after the channel level control and in this case the post send would be used.

PRE SEND AND RETURN JACKS (65)

The pre send and return jacks allow individual channel patching immediately after the input gain control and before EQ, monitor sends, and all other functions. The send jack may be used to patch out from the channel for any reason a separate output is needed and the audio chain is not interrupted. The return jack is of the switching type and breaks the normal path of signal flow thus allowing limiters, equalizers, noise gates, etc. to be patched from the pre send back into the pre return jack.

CHANNEL INPUTS/PATCH (66)

Each channel is equipped with a 600 ohm transformer balanced mic input and 50,000 ohm unbalanced line input. The use of the High Z input defeats the Low Z input.

PHANTOM POWER SWITCH (67)

The Mark IV™ Series Mixer contains an internal 24 V regulated phantom power supply which can be switched on to all the individual input connectors allowing phantom powered microphone operation.

SUBMASTER STATUS INDICATION (68)

The submaster mixing systems have been provided with a LED status indicator for each sub separately. The summing of several channels may cause a sub mix to become overloaded many times at the master summing amp. The only controls provided to adjust the summed output of several channels are the slide level controls on each channel with the LED indication appearing at -10 dBV and +10 dBV. It is a simple procedure to optimize the overall summed signal which is assigned, for instance, to Sub 1 and control the total output from those channels as they mix into the submaster. Subs 2, 3, and 4 are identical as shown. Once again, the mix system is capable of +18 dBV and when the +10 LED flashes it does not mean that this particular sub has overloaded, but merely +10 has been reached. (See description for channel LED status)

LAMP DIM (69)

This control allows the operator to select the lamp intensity at the mixer for each situation of house lighting. Clockwise increases the intensity and counterclockwise dims lamps.

AC POWER SWITCH/LED (70)

The power switch is a rocker type which is off at the bottom position and on at the top. The LED indicates that the AC mains is supplying the necessary power to the mixer.

MARK IV™ SET—UP PROCEDURE

MAIN SYSTEM

1. Input gain controls off (at infinity-all channels).
2. Adjust all equalization to "0" (flat).
3. Monitor and effects sends should be at "0".
4. Adjust channel and master sliders to "0" dB or mid-point of travel. (including sum)
5. Perform assignment of channels to desired submasters.
6. Now with instrument or vocal patched into channel (1), slowly increase the input gain control until the LED status indication exhibits proper input level. The green (-10) LED should flash constantly with most any signal at the input, but the red (+10) LED should flash only on the peaks which represent the loudest requirement for this particular channel. If equalization (especially lows) is necessary on channel (1), the input gain should be re-adjusted after the EQ adjustments are made. NOTE: The red and green LED's exhibit a sampling of the input signal before and after the EQ.
7. All channels that are to be utilized should be initially set up with the same procedure as outlined for channel (1).

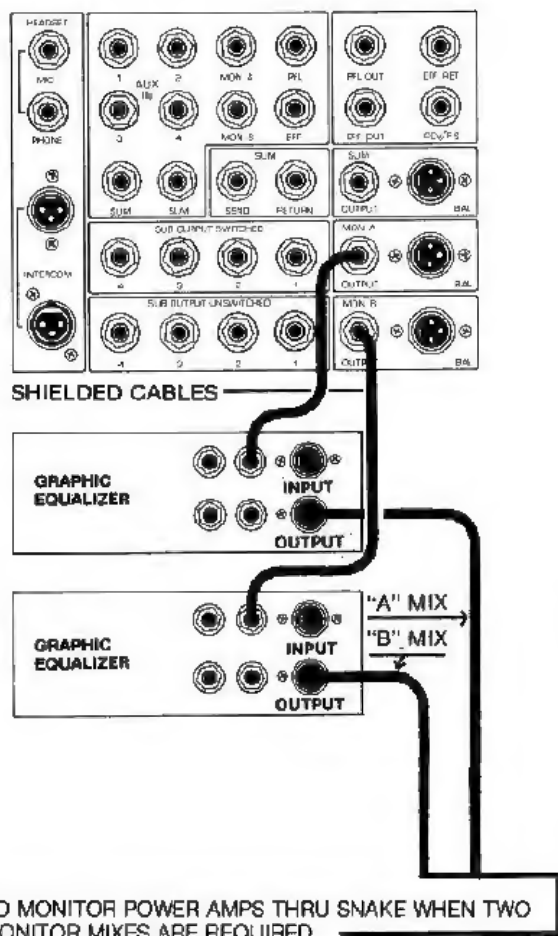
MONITOR SYSTEM

1. The set-up of a typical monitor situation should begin after the input gains have been established and the initial main system adjustments have been made.
2. Adjust monitor master level controls to the approximate mid-point of their travel.
3. Decide which instruments or vocals need to be in the "A" monitor mix and adjust the desired amount for each channel using the monitor "A" send controls. The level of each instrument or vocal in mix "A" will be dictated by the musicians themselves as they request certain levels in their monitor speakers.
4. The set-up procedure for monitor mix "B" should be identical to the above description for the "A" mix. NOTE: Each monitor mix may not necessarily utilize the same channels. The players who are listening to the "B" mix may request totally different instruments or vocals for their mix.

A proper adjustment of the input gain control is very important before attempting to balance monitors because the monitor sends are affected by the input gain controls. For instance, the monitors could be adjusted to **maximum gain before feedback** and everything would appear to be very satisfactory. Now, if it becomes necessary to boost the input gain 3 dB on one or two channels, the monitors would almost certainly erupt into feedback.

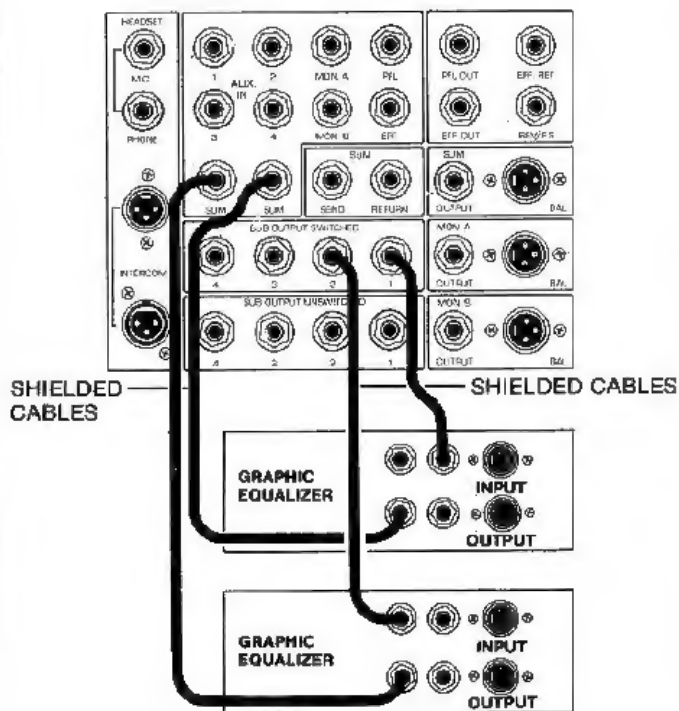
If an outboard effects device is necessary for the system set-up, see Effects Patch Diagram.

PATCH FOR TWO SEPARATE "EQUALIZED" MONITOR MIXES.



NOTE: BALANCED OUTPUTS ARE NECESSARY FOR LONG TRANSMISSION LINES.)

PATCH FOR SEPARATELY EQUALIZED SUBS

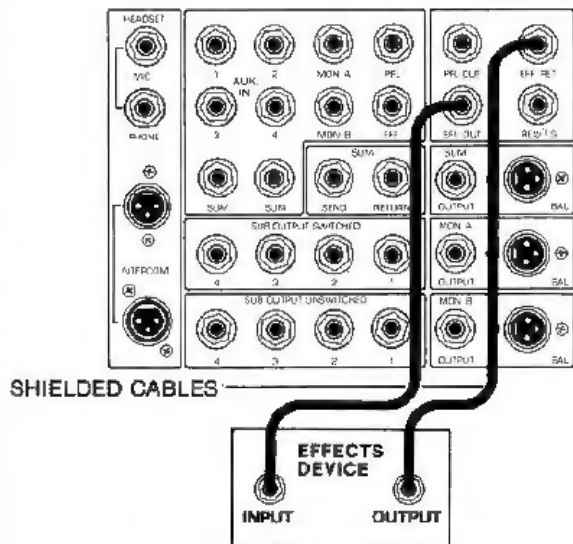


NOTE: SWITCHED SUB OUTPUTS MUST BE USED TO INTERFACE EXTERNAL EQUALIZER BETWEEN SUBMASTER AND SUM CONTROL.

NOTE: IF ALL FOUR SUBS MUST BE EQUALIZED, "Y" CONNECTORS MUST BE EMPLOYED TO GET BACK INTO THE SUM FOR MONAURAL OPERATION. (ONLY TWO SUM INPUTS PROVIDED)

NOTE: MANY TIMES DURING CONCERT SITUATIONS, ONLY VOCALS MAY NEED TO BE EQUALIZED SEPARATELY. PERCUSSIONS NEED SEPARATE EQ AT TIMES, BUT ELECTRIC INSTRUMENTS WITH THEIR OWN AMPLIFICATION RARELY EVER NEED SEPARATE EQ.

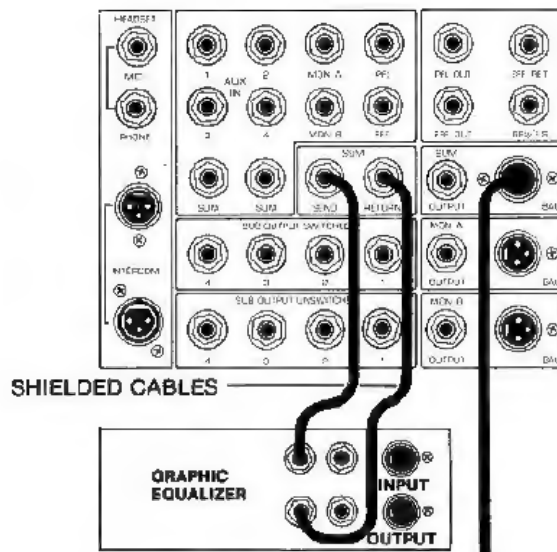
PATCH FOR EFFECTS DEVICES



EFFECTS HOOK-UP IS TYPICAL FOR DELAY UNITS, PHASORS, FLANGERS, HARMONIZERS, CHORUS UNITS, ETC.

NOTE: EFFECTS DEVICES USED WITH THIS SYSTEM SHOULD BE "LINE-LEVEL" PRODUCTS TO WORK SATISFACTORILY. UNITS DESIGNED TO ACCEPT MICROPHONE AND GUITAR SIGNAL LEVELS WILL NOT FUNCTION PROPERLY IN THE EFFECTS LOOP

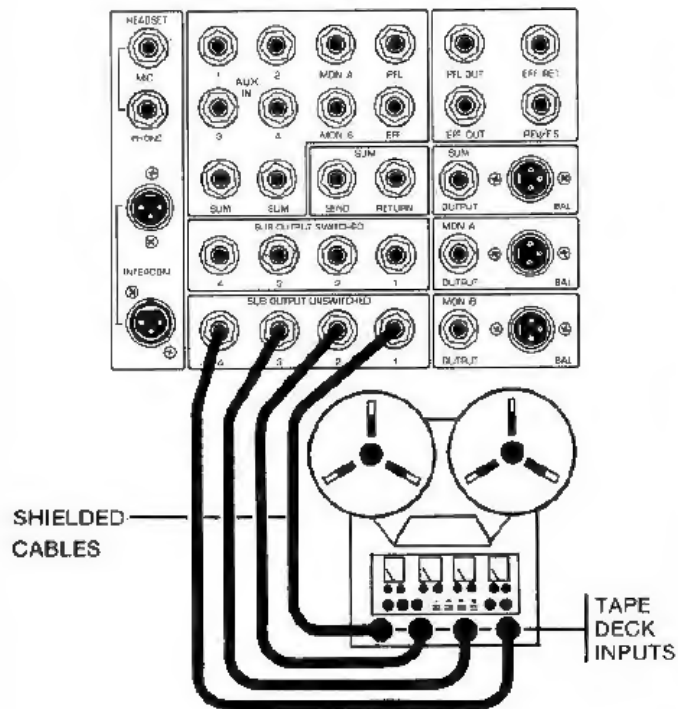
PATCH FOR HOUSE EQUALIZATION WHEN SUM OUTPUT IS USED FOR MONAURAL OPERATION.



TO POWER AMPS THRU SNAKE FOR MONAURAL SOUND REINFORCEMENT.

NOTE: GRAPHIC WITH UN-BALANCED OUTPUT MAY BE USED SINCE PATCH IS BEFORE SUM OUTPUT. THE BALANCED SUM OUTPUT THEN MAY BE USED IN A CONVENTIONAL MANNER.

PATCH FOR 4-TRACK TAPE RECORDING DIRECT FROM SUB-MASTERS.

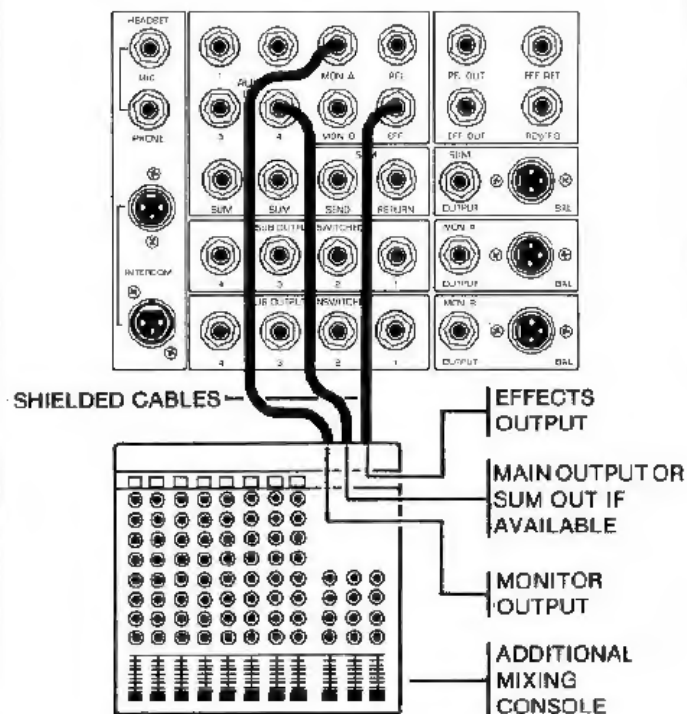


NOTE: SUM OUTPUT MAY BE USED WHEN TAPING IN MONO.

NOTE: TAPE RECORDING MAY BE ACCOMPLISHED DURING SOUND REINFORCEMENT SITUATIONS WHEN SUM IS USED FOR MAIN HOUSE SYSTEM AND UNSWITCHED OUTPUTS ARE NOT EMPLOYED.

NOTE: ANY VOCAL OR INSTRUMENT ASSIGNED DIRECTLY TO SUM WILL NOT APPEAR ON SUB OUTPUTS.

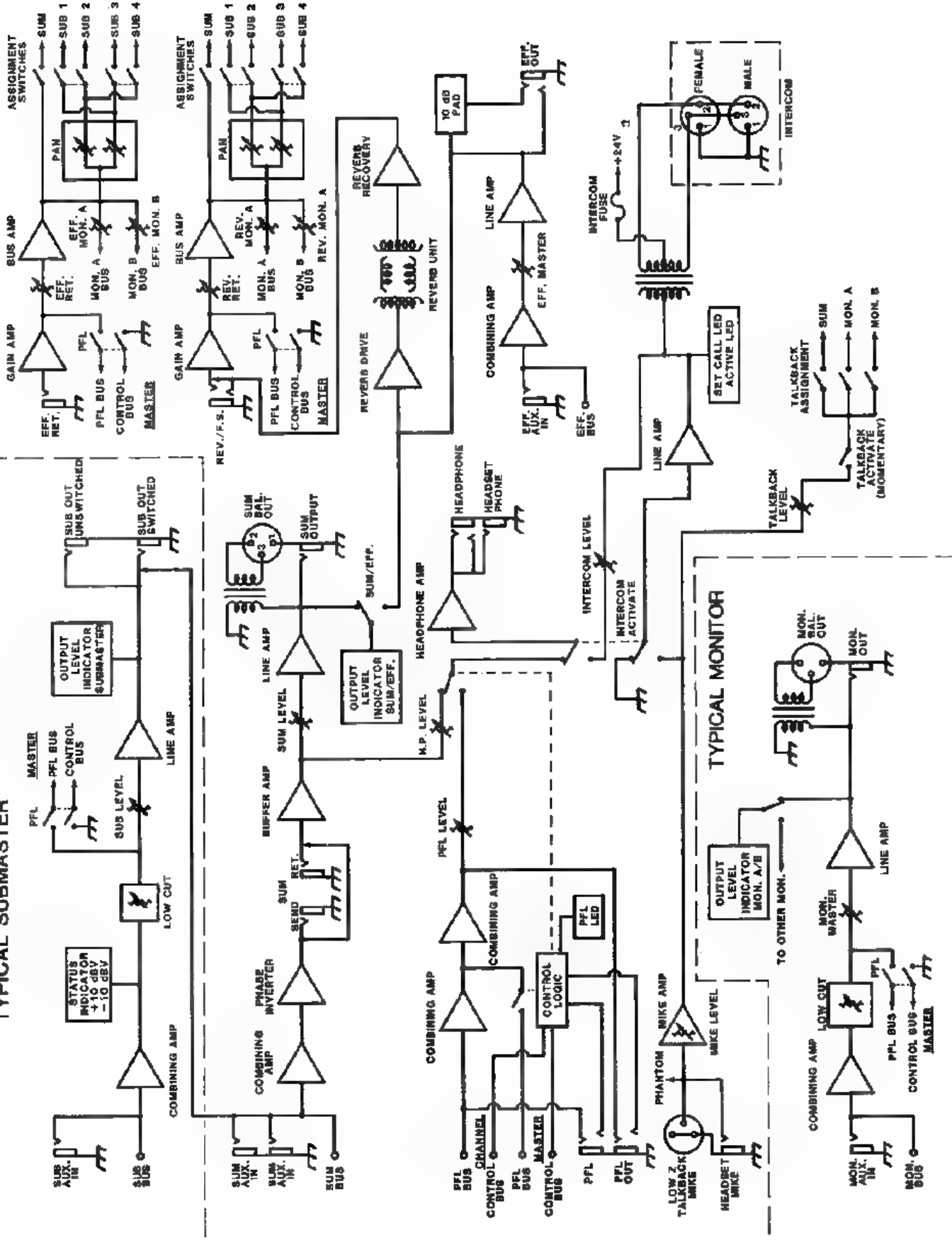
PATCHING AUXILIARY (SUB) MIXER TO MARK IV FOR ADDITIONAL INPUT CHANNELS.



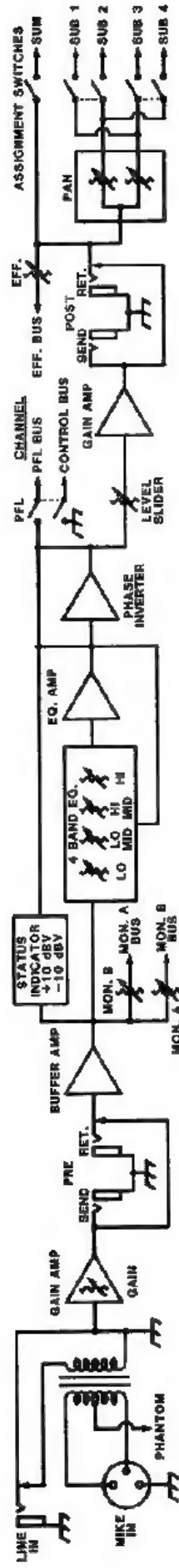
NOTE: AN AUXILIARY MIXER MAY BE PATCHED INTO ANY ONE OF THE SUB AUXILIARY INPUTS OR SUM.

MARK IV MIXER MASTER BLOCK DIAGRAM

TYPICAL SUBMASTER



MARK IV MIXER PREAMP BLOCK DIAGRAM



MARK IV™ 16/24 CHANNEL MIXER SPECIFICATIONS:

SUMMARY OF FUNCTIONS:

16/24 channels in; 4 sub outs; sum out; 2 monitor outs; 1 effect (high/low level) out; send/return patch each channel (pre or post), each sub and sum; Intercom system with phantom powered slaves; mono headphone out; phantom power gooseneck mic input; communication type headset optional; talkback to sum & monitors; 4-band EQ, pan, PFL & assignments each channel; PFL & variable low cut each sub & each monitor; effects & reverb return with pan, PFL & assignments; 24 volt phantom power each channel; internal reverb

INPUTS, EACH CHANNEL:

1 low Z transformer balanced microphone; 1 high Z unbalanced line; 1 high Z unbalanced pre return and 1 high Z unbalanced post return

INPUTS, MASTER:

1 unbalanced auxiliary for each sub, monitor A, monitor B, effects, PFL; 1 unbalanced auxiliaries for sum; 1 unbalanced high Z effects return; 1 unbalanced high Z reverb return (or footswitch); 1 unbalanced high Z sum return

OUTPUTS, EACH CHANNEL:

1 low Z unbalanced pre send line
1 low Z unbalanced post send line

OUTPUTS, MASTER:

1 low Z balanced line & 1 low Z unbalanced line each for sum, monitor A & monitor B; 1 switched and 1 unswitched low Z unbalanced line each for Sub 1, 2, 3, 4; 1 low Z unbalanced sum send; 1 low Z unbalanced (high/low level) effects; 2 (1 male/1 female) balanced intercom lines

CHANNEL MICROPHONE INPUTS:

Mic Impedance: Low Z 600 ohms transformer balanced
Nominal Input Level: -22 dBm, 60 mV RMS
Minimum Input Level: -38 dBm, 10 mV RMS
Maximum Input Level: +22 dBm, 10 volts RMS

CHANNEL LINE (HIGH Z MIC) INPUTS:

Line Impedance: High Z 50K ohms unbalanced
Nominal Input Level: -14 dBV, 200 mV RMS
Minimum Input Level: -30 dBV, 30 mV RMS
Maximum Input Level: +30 dBV, 30 volts RMS

CHANNEL RETURNS (PRE & POST) AND AUXILIARY INPUTS:

Line Impedance: High Z 33K ohms unbalanced
Designed Input Level: 0 dBV, 1 volt RMS

EFFECTS RETURN INPUT:

Nominal Input Level: 0 dBV, 1 V RMS
Minimum Input Level: -14 dBV, 0.2 V RMS
Maximum Input Level: +6 dBV, 2 V RMS

SUM, MONITOR A & MONITOR B BALANCED OUTPUTS:

Load Impedance: 600 ohms or greater
Nominal Output: 0 dBV, 1 V RMS
Maximum Output: +18 dBV, 8 V RMS into 50K ohms load
+16 dBm, 5 V RMS into 600 ohms load

SUM, MONITOR A, MONITOR B, SUB 1, SUB 2, SUB 3, SUB 4, SUM SEND, CHANNEL SENDS (PRE & POST), & EFFECTS (HIGH LEVEL) UNBALANCED OUTPUTS:

Load Impedance: 600 ohms or greater
Nominal Output: 0 dBV, 1 V RMS
Maximum Output: +18 dBV, 8 V RMS into 50K ohms load
+14 dBm, 4 V RMS into 600 ohms load

EFFECTS (LOW LEVEL) UNBALANCED OUTPUT:

Load Impedance: 10K ohms or greater
Nominal Output: -12 dBV, 0.25 V RMS
Maximum Output: +6 dBV, 2 V RMS

HEADSET:

(TALKBACK & COMMUNICATION/PFL FUNCTIONS)

Compatible with 150 ohm mic, 600 ohm receiver with 1/4" phone plugs for each

HEADPHONES:

(MONO AMP WITH STEREO JACK)

Load Impedance: 4 ohms to 50 ohms
Maximum Output Power: 100 mW

TALKBACK MIC INPUT:

XLR connector with +15 V phantom power compatible with electret gooseneck type mic

INTERCOM LINE:

Bridging, balanced XLR's with 24 V phantom power for interface with external slave Talk/Com™ and other mixing consoles with compatible features

INTERCOM SPECS:

Nominal Impedance: 600 ohms transformer balanced
Nominal Level: 0 dBV, 1 V RMS

THE FOLLOWING SPECS MEASURED WITH A NOMINAL

INPUT GAIN SETTING OF +14 dB ALL CHANNEL, ALL SLIDERS SET AT 0 dB, ALL EQ SET FLAT, ALL LOW Z INPUTS TERMINATED WITH 600 OHMS, ALL HIGH Z INPUTS & ALL OUTPUTS TERMINATED WITH 47K OHMS

FREQUENCY RESPONSE: (Any in/out combination with 1 V RMS output)

+0, -2 dB, 20 Hz to 30 KHz

SYSTEM HUM & NOISE:

-84 dBV (High Z line inputs)

(All channels on):

-80 dBV (Low Z mic inputs)

EQUIVALENT INPUT NOISE:

(20 Hz - 20 KHz, 150 ohms)

-127 dBV

OVERALL DISTORTION:

(Any in/out combination, 20 Hz - 20 KHz @ 1 V RMS)

Less than .05% THD, typically below .01%

EQUALIZATION:

+/-15 dB @ 60 Hz & 15 KHz, Shelving

+/-15 dB @ 400 Hz & 3 KHz, Peak/Notch

CROSSOVER:

Greater than 70 dB @ 1 KHz

MAXIMUM AVAILABLE GAIN:

+14 dB sum slider

+14 dB sub slider

+14 dB channel slider

+30 dB input control

+10 dB balanced input transformer

+82 dB total

LED READOUT RANGE:

-21 to +6 dBV

(Sub 1, 2, 3, 4, Mon. A & B, Sum, & Effects)

CHANNEL & SUB STATUS INDICATOR LED CALIBRATION:

-10 dBV (Green) & +10 dBV (Red)

POWER REQUIREMENTS:

120 VAC, 60 Hz, 90 watts

THIS LIMITED WARRANTY VALID ONLY WHEN PURCHASED AND REGISTERED IN THE UNITED STATES OR CANADA. ALL EXPORTED PRODUCTS ARE SUBJECT TO WARRANTY AND SERVICES TO BE SPECIFIED AND PROVIDED BY THE AUTHORIZED DISTRIBUTOR FOR EACH COUNTRY.

Ces clauses de garantie ne sont valables qu'aux Etats-Unis et au Canada. Dans tous les autres pays, les clauses de garantie et de maintenance sont fixées par le distributeur national et assurées par lui selon la législation en vigueur.

Diese Garantie ist nur in den USA und Kanada gültig. Alle Export-Produkte sind der Garantie und dem Service des Importeurs des jeweiligen Landes unterworfen.

Esta garantía es válida solamente cuando el producto es comprado en E.U. continentales o en Canadá. Todos los productos que sean comprados en el extranjero, están sujetos a las garantías y servicio que cada distribuidor autorizado determine y ofrezca en los diferentes países.

ONE-YEAR LIMITED WARRANTY/REMEDY

PEAVEY ELECTRONICS CORPORATION ("PEAVEY") warrants this product, EXCEPT for covers, footswitches, patchcords, tubes and meters, to be free from defects in material and workmanship for a period of one (1) year from date of purchase, PROVIDED, however that this limited warranty is extended only to the original retail purchaser and is subject to the conditions, exclusions and limitations hereinafter set forth:

PEAVEY 90-DAY LIMITED WARRANTY ON TUBES AND METERS

If this product contains tubes or meters, Peavey warrants the tubes or meters contained in the product to be free from defects in material and workmanship for a period of ninety (90) days from date of purchase; PROVIDED, however, that this limited warranty is extended only to the original retail purchaser and is also subject to the conditions, exclusions and limitations hereinafter set forth.

CONDITIONS, EXCLUSIONS AND LIMITATIONS OF LIMITED WARRANTIES

These limited warranties shall be void and of no effect if:

- The first purchase of the product is for the purpose of resale; or
- The original retail purchase is not made from an AUTHORIZED PEAVEY DEALER; or
- The product has been damaged by accident or unreasonable use, neglect, improper service or maintenance, or other causes not arising out of defects in material or workmanship; or
- The serial number affixed to the product is altered, defaced or removed.

In the event of a defect in material and/or workmanship covered by this limited warranty, Peavey will:

- In the case of tubes or meters, replace the defective component without charge;
- In other covered cases (i.e., cases involving anything other than covers, footswitches, patchcords, tubes or meters), repair the defect in material or workmanship or replace the product, at Peavey's option;

and provided, however, that, in any case, all costs of shipping, if necessary, are paid by you, the purchaser.

THE WARRANTY REGISTRATION CARD SHOULD BE ACCURATELY COMPLETED AND MAILED TO AND RECEIVED BY PEAVEY WITHIN FOURTEEN (14) DAYS FROM THE DATE OF YOUR PURCHASE.

In order to obtain service under these warranties, you must:

- Bring the defective item to any AUTHORIZED PEAVEY DEALER or AUTHORIZED PEAVEY SERVICE CENTER and present therewith the ORIGINAL PROOF OF PURCHASE supplied to you by the AUTHORIZED PEAVEY DEALER in connection with your purchase from him of this product.
If the DEALER or SERVICE CENTER is unable to provide the necessary warranty service you will be directed to the nearest other PEAVEY AUTHORIZED DEALER or AUTHORIZED PEAVEY SERVICE CENTER which can provide such service.

OR

- Ship the defective item, prepaid, to:

PEAVEY ELECTRONICS CORPORATION
International Service Center
Highway 80 East
MERIDIAN, MS 39301

including therewith a complete, detailed description of the problem, together with a legible copy of the original PROOF OF PURCHASE and a complete return address. Upon Peavey's receipt of these items:

If the defect is remedial under these limited warranties and the other terms and conditions expressed herein have been complied with, Peavey will provide the necessary warranty service to repair or replace the product and will return it, FREIGHT COLLECT, to you, the purchaser.

Peavey's liability to the purchaser for damages from any cause whatsoever and regardless of the form of action, including negligence, is limited to the actual damages up to the greater of \$500.00 or an amount equal to the purchase price of the product that caused the damage or that is the subject of or is directly related to the cause of action. Such purchase price will be that in effect for the specific product when the cause of action arose. This limitation of liability will not apply to claims for personal injury or damage to real property or tangible personal property allegedly caused by Peavey's negligence. Peavey does not assume liability for personal injury or property damage arising out of or caused by a non-Peavey alteration or attachment, nor does Peavey assume any responsibility for damage to interconnected non-Peavey equipment that may result from the normal functioning and maintenance of the Peavey equipment.

UNDER NO CIRCUMSTANCES WILL PEAVEY BE LIABLE FOR ANY LOST PROFITS, LOST SAVINGS, ANY INCIDENTAL DAMAGES OR ANY CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT, EVEN IF PEAVEY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

THESE LIMITED WARRANTIES ARE IN LIEU OF ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE; PROVIDED, HOWEVER, THAT IF THE OTHER TERMS AND CONDITIONS NECESSARY TO THE EXISTENCE OF THE EXPRESS, LIMITED WARRANTIES, AS HEREINABOVE STATED, HAVE BEEN COMPLIED WITH, IMPLIED WARRANTIES ARE NOT DISCLAIMED DURING THE APPLICABLE ONE-YEAR OR NINETY-DAY PERIOD FROM DATE OF PURCHASE OF THIS PRODUCT.

SOME STATES DO NOT ALLOW LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THESE LIMITED WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

THESE LIMITED WARRANTIES ARE THE ONLY EXPRESS WARRANTIES ON THIS PRODUCT, AND NO OTHER STATEMENT, REPRESENTATION, WARRANTY OR AGREEMENT BY ANY PERSON SHALL BE VALID OR BINDING UPON PEAVEY.

In the event of any modification or disclaimer of express or implied warranties, or any limitation of remedies, contained herein conflicts with applicable law, then such modification, disclaimer or limitation, as the case may be, shall be deemed to be modified to the extent necessary to comply with such law.

Your remedies for breach of these warranties are limited to those remedies provided herein and Peavey Electronics Corporation gives this limited warranty only with respect to equipment purchased in the United States of America.

INSTRUCTIONS — WARRANTY REGISTRATION CARD

- Mail the completed WARRANTY REGISTRATION CARD to:

PEAVEY ELECTRONICS CORPORATION
POST OFFICE BOX 2898
MERIDIAN, MISSISSIPPI 38002-2898

- Keep the PROOF OF PURCHASE. In the event warranty service is required during the warranty period, you will need this document. **There will be no identification card issued by Peavey Electronics Corporation.**
- IMPORTANCE OF WARRANTY REGISTRATION CARDS AND NOTIFICATION OF CHANGES OF ADDRESS:
 - Completion and mailing of WARRANTY REGISTRATION CARDS — Should notification become necessary for any condition that may require correction, the REGISTRATION CARD will help ensure that you are contacted and properly notified.
 - Notice of address changes — If you move from the address shown on the WARRANTY REGISTRATION CARD, you should notify Peavey of the change of address so as to facilitate your receipt of any bulletins or other forms of notification which may become necessary in connection with any condition that may require dissemination of information or correction.
- You may contact Peavey directly by telephoning (601) 488-5365.
- Please have the Peavey product name and serial number available when communicating with Peavey Customer Service.

DANGER

EXPOSURE TO EXTREMELY HIGH NOISE LEVELS MAY CAUSE A PERMANENT HEARING LOSS. INDIVIDUALS VARY CONSIDERABLY IN SUSCEPTIBILITY TO NOISE INDUCED HEARING LOSS, BUT NEARLY EVERYONE WILL LOSE SOME HEARING IF EXPOSED TO SUFFICIENTLY INTENSE NOISE FOR A SUFFICIENT TIME.

THE U.S. GOVERNMENT'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) HAS SPECIFIED THE FOLLOWING PERMISSIBLE NOISE LEVEL EXPOSURES

DURATION PER DAY IN HOURS

8
6
4
3
2
1 1/2
1
1/2 or less

SOUND LEVEL dBA, SLOW RESPONSE

90
92
95
97
100
102
105
110
115

ACCORDING TO OSHA, ANY EXPOSURE IN EXCESS OF THE ABOVE PERMISSIBLE LIMITS COULD RESULT IN SOME HEARING LOSS.

EAR PLUGS OR PROTECTORS IN THE EAR CANALS OR OVER THE EARS MUST BE WORN WHEN OPERATING THIS AMPLIFICATION SYSTEM IN ORDER TO PREVENT A PERMANENT HEARING LOSS IF EXPOSURE IS IN EXCESS OF THE LIMITS AS SET FORTH ABOVE. TO INSURE AGAINST POTENTIALLY DANGEROUS EXPOSURE TO HIGH SOUND PRESSURE LEVELS, IT IS RECOMMENDED THAT ALL PERSONS EXPOSED TO EQUIPMENT CAPABLE OF PRODUCING HIGH SOUND PRESSURE LEVELS SUCH AS THIS AMPLIFICATION SYSTEM BE PROTECTED BY HEARING PROTECTORS WHILE THIS UNIT IS IN OPERATION.

CAUTION

THIS MIXING CONSOLE EFFECTS DEVICE FRAME HAS BEEN DESIGNED AND CONSTRUCTED TO PROVIDE ADEQUATE SIGNAL (VOLTAGE) FOR PLAYING MODERN MUSIC. IMPROPER USE OF THE GAIN/BOOSTER CONTROLS AND/OR IMPROPER USE OF INTERNAL/EXTERNAL BUSES MAY CREATE CLIPPING (SQUARE WAVES) AND POSSIBLY CAUSE SUBSEQUENT DAMAGE TO THE LOUDSPEAKER SYSTEMS. EXTENDED OPERATION OF THE GAIN/BOOSTER CONTROLS IN THEIR MAXIMUM POSITIONS IS THEREFORE NOT RECOMMENDED. PLEASE BE AWARE THAT MAXIMUM POWER CAN BE OBTAINED WITH VERY LOW SETTINGS OF THE GAIN/EQUALIZATION CONTROLS IF THE INPUT SIGNAL IS VERY STRONG.

IT IS COMMON PRACTICE AMONG USERS OF SOUND REINFORCEMENT EQUIPMENT TO IDENTIFY THE INDIVIDUAL CHANNELS WITH A STRIP OF TAPE PLACED ABOVE OR BELOW THE ROW OF VOLUME FADERS. MANY TYPES OR BRANDS OF TAPE HAVE A VERY STRONG ADHESIVE WHICH INHIBIT THE PAINT ON THE FACEPLATE AND ACTUALLY REMOVE THE PAINT WHEN THE TAPE IS REMOVED. WE STRONGLY RECOMMEND THAT SCOTCH TAPE NOT BE USED ON PAINTED SURFACES AND ANY OTHER TAPE THAT IS NOT SPECIALLY DESIGNED FOR SUCH APPLICATIONS. MEDICAL-GLASS ADHESIVE MARKING OR LABEL TAPE IS RECOMMENDED IF IT IS USED. ANY TAPE LEFT ON PAINTED SURFACE FOR EXTENDED PERIODS WILL BE DIFFICULT TO REMOVE. NEVER RUBS, SCRAPE OR SCOTCH TAPE FROM PAINTED SURFACES.

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be retained for future reference.
3. Obey all cautions in the operating instructions and on the back of the unit.
4. All operating instructions should be followed.
5. This product should not be used near water, i.e. a bathtub, sink, swimming pool, wet basement, etc.
6. This product should be located so that its position does not interfere with its proper ventilation. It should not be placed flat against a wall or placed in a built-in enclosure that will impede the flow of cooling air.
7. This product should not be placed near a source of heat such as a stove, radiator or another heat producing appliance.

8. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
9. Never break off the ground pin on the power supply cord. For more information on grounding write for our free booklet, "Shock Hazard and Grounding."
10. Power supply cords should always be handled carefully. Never walk on place equipment on power supply cords. Periodically check cords for cuts or signs of stress, especially at the plug and the point where the cord exits the unit.
11. The power supply cord should be unplugged when the unit is to be unused for long periods of time.
12. If this product is to be mounted in an equipment rack, rear support should be provided.

13. Metal bases can be cleaned with a damp rag. The vinyl covering used on some units can be cleaned with a damp rag, or an ammonia based household cleaner if necessary.
14. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation holes or any other openings.
15. This unit should be checked by a qualified service technician if:
 - A. The power supply cord or plug has been damaged.
 - B. Anything has fallen or been spilled into the unit.
 - C. The unit does not operate correctly.
 - D. The unit has been dropped or the enclosure damaged.
16. The user should not attempt to service this equipment. All service work should be done by a qualified service technician.



Features and specifications subject to change without notice.

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